

REMARKS

Claims 1, 2, 4, 6-9, 21, 23-25, and 27-28 are currently pending in the Application. Claim 1-2, 4, 6-9, 21, and 25 are currently amended, without acquiescence in the cited basis for rejections or prejudice to pursue the original claims in a related application. No new matter has been added. No new matter has been added.

I. Rejections of Claims under 35 USC § 103(a)

Claims 1-2, 4, 6-9, 11, 14-18, 21, and 23-28 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Wong (Pub. No. 2004/0264464) in view of, in view of Tang et al. (U.S. Patent No. 6,553,028 B1).

Regarding the rejection of claims 11, 14-18, and 26, the rejection is now moot based upon the cancellation of these claims. Regarding the rejection of claim 1-2, 4, 6-9, 21, 23-25, and 27-28, Applicant respectfully traverse.

Without acquiescence in the cited basis for rejection or prejudice to pursue the original claim in a related application, independent claim 1 is currently amended and recites at least the following limitations.

a number of duplications of the packet for each of at least some of the plurality of output ports is controlled by descriptors arranged in the linked-list table and is duplicated on a per port basis by duplicating the number of duplications on at least one of the plurality of output ports rather than by duplicating on all of the plurality of output ports,
at least one of the one or more descriptor is shared among multiple output ports of the plurality of output ports, and
a contiguous range encoding that includes a starting indicator and an ending indicator for encoding a first set of the one or more descriptors within the contiguous range;
(emphasis added.)

Applicants respectfully submit that neither Wong nor Tang teaches, discloses, or suggests these claim limitations.

A. MPEP 2144.05 mandates that “[a] prima facie case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention.”

MPEP 2144.05(III), citing *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997) (emphasis added.)

(a) Applicants respectfully submit that Tang teaches away from at least the claimed limitations “a number of duplications of the packet for each of at least some of the plurality of output ports is controlled by descriptors arranged in the linked-list table and is duplicated on a per port basis by duplicating the number of duplications on at least one of the plurality of output ports rather than by duplicating on all of the plurality of output ports”.

Tang discloses a technique for implementing forwarding operations “shortcuts” at a switch for multicast data traffic routed between sub-networks of a computer network. Col. 5, ll. 14-17 and Abstract. Nonetheless, in the very passages that are also relied upon by the final Office action, Tang discloses that “[t]he replication engine uses the L3 information, including the MET pointer, MAC SA and LTL index to perform the necessary replication operations . . . For frames destined to ports on VLANs other than the ingress VLAN, the replication engine rewrites those frames.” Col. 14, ll. 4-15. That is, Tang’s approach rewrites the frames that are destined to ports other than the input ports.

More importantly, in explaining its detailed replication technique, Tang expressly requires that “[s]pecifically, **each port on the switch receives the frame** driven over the switching bus 310 and **the port select signals derived from the LTL index instruct only those selected ports to ‘keep’ the frame; all other ports discard the frame.** The replication engine 316 starts with an egress VLAN entry, replicates it over the switching bus and then issues the index to the LTL 350 which provides the port select signals that select the appropriate ports within that VLAN.” Col. 14, ll. 16-23 (emphasis added.) In other words, Tang’s replication technique replicates the data on all the ports and uses the port select signals to instruct the selected ports to keep the replicated data, while the other ports are required to discard such replicated data.

Nonetheless, Applicants respectfully submit that this is not the claimed limitation. Claim 1 requires that “a number of duplications of the packet . . . is duplicated on a per port basis by duplicating the number of duplications on at least one of the plurality of output ports rather than by duplicating on all of the plurality of output ports”. In contrast, Tang’s approach requires replicating the data on all the ports and then uses the port select signals to determine which ports should discard the replicated data.

Applicants respectfully submit that Tang’s replicating the data on all the ports clearly teaches the opposite of the aforementioned limitations and thus cannot be combined with other references to support claim rejections under 35 U.S.C. § 103 as mandated by the 35 U.S.C. § 103 jurisprudence and MPEP § 2144.05 for at least the foregoing reasons.

(b) To the extent that the final Office action considers Tang's LTL index as disclosing or rendering obvious the claimed limitation "descriptor", which Applicants strenuously disagree, Applicants respectfully submit that Tang further teaches away from at least the claimed limitation "at least one of the one or more descriptor is shared among multiple output ports of the plurality of output ports".

In explaining its network switch configured to implement Tang's multicast shortcut technique, Tang discloses that "the forwarding engine 302 and the shortcut engine 304 render forwarding decisions for frames/packets passing through the switch 300 and drive those decisions (e.g., unique index values), over a result bus 306 where they are received by a local target logic (LTL) circuit 350. The LTL 350 then implements the forwarding decisions by mapping the index values to port select signals used to select ports as destinations for receiving data frames transferred over the switching bus 310." Col. 7, ll. 46-54 (emphasis added.) Tang further discloses that "[t]here are generally two values assigned to each port of the switch 300: a VLAN value and an index value. The index is a hard-coded value that uniquely identifies the port to the switch", and that "[i]t should be noted that there are preferably a plurality of port cards within switch 300 to provide a plurality of ports 1-9, each of which is assigned a unique port index value" Col. 8, ll. 16-19 and 38-41 (emphasis added.)

That is, Tang's LTL circuit responds to a unique index / unique forwarding decision, which references an entry (352) of the LTL (350) by driving a corresponding port select signal (355) over the switch bus (310) to select the port. This clearly shows that for each packet, the

LTL entries are also unique because both the input (the forwarding decisions) of the LTL and the output (the port indices) are both unique.

Therefore, Applicants respectfully submit that to the extent that the final Office action considers Tang's LTL entries as disclosing or rendering obvious the claimed limitation "descriptor", none of Tang's LTL entries can be shared. As such, Tang again teaches away from at least the claimed limitation "at least one of the one or more descriptor is shared among multiple output ports of the plurality of output ports" and thus cannot be combined with other references to support claim rejections under 35 U.S.C. § 103 as mandated by the 35 U.S.C. § 103 jurisprudence and MPEP § 2144.05 for at least the foregoing reasons.

B. MPEP further requires that the proposed modification cannot change the principle of operation of a reference, and that the suggested combination may not require a substantial reconstruction and redesign of the elements in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." MPEP § 2143.01 citing *In re Ratti*, 270, F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959) (emphasis added.)

As presented in subsection A immediately above, Applicants respectfully submit that Tang requires replicating the data on all the ports and discarding the data on the ports not selected. Nonetheless, the alleged combination of Tang and Wong inevitably requires Tang to duplicate the number of duplications on at least one of the plurality of output ports rather on all of the plurality of ports. Applicants respectfully submit that this alleged combination

impermissibly changes the basic principle of operation under which Tang is devised to operate, and that the alleged combination will require substantial modification and redesign of Tang's replication technique NOT to replicate the data on the unselected ports and NOT to use the port select signals to instruct the unselected ports to discard the data.

Therefore, Applicants respectfully submit that this alleged modification as purported by the final Office action runs afoul the mandate of the 35 U.S.C. § 103 jurisprudence and MPEP § 2143.01, and that the combination of Wong and Tang thus cannot be used to preclude patentability of the claims under 35 U.S.C. § 103.

C. Applicants respectfully submit that neither Tang nor Wong discloses, teaches, or suggests at least the claimed limitation "a contiguous range encoding", much less the other limitations interrelated with the "contiguous range encoding".

(a) The final Office action cites to col. 14, ll. 37-43 of Wong and alleges that these cited passages disclose or render obvious the claimed limitation "a contiguous range encoding". Applicants respectfully disagree.

Applicants respectfully submit that Wong does NOT have col. 14. Applicants assumed that the final Office action meant to refer to Tang but erroneously cited to Wong. In addition, practitioner Mr. P. Mei similarly raised the question in the previous response to the previous non-final Office action. Nonetheless, the final Office action still cites to the same reference and passages without clarifying whether the previous citation constitutes a mistake. As a result,

Applicants thus respectfully request the examiner to clarify the basis for rejection and to correct the records.

(b) The cited passages in col. 14, ll. 37-43 disclose that Tang's replication engine 316 access each MET entry 700 sequentially, starting from the location referenced by the MET pointer until it reaches an entry having an asserted control bit in the HC field (712).

Nonetheless, Applicants respectfully submit that this is not the claimed limitation. The final Office action considers Tang's LTL entries as disclosing the claimed limitation "descriptors", which Applicants disagree. Even if Tang's LTL entries were to be considered as disclosing the claimed limitations "descriptors", Applicants respectfully submit that Fig. 3 and col. 7, l. 39-col. 8, l. 62 and col. 9, l. 57-col. 10, l. 14 make it clear that the LTL entries work closely with Tang's L2 forwarding engine to drive the port select signals. On the other hand, the alleged "sequential" access of the MET entry is performed by the replication engine which no longer refers to or requires the LTL entries.

Therefore, Applicants respectfully submit that neither Tang nor Wong discloses, teaches, or suggests the claimed limitation "a contiguous range encoding", much less the other limitations interrelated with the "contiguous range encoding".

D. Moreover, with respect to independent claim 1, the final Office Action again relies on col. 14, lines 4-15 of Tang and alleges that these passages disclose the claimed limitation "a number of duplications of the packet for each of at least some of the plurality of output ports is

controlled by descriptors arranged in the linked-list table . . .” of the claims. Applicants respectfully disagree.

The passages in col. 14, ll. 4-15 are reproduced below for reference.

5 The replication engine uses the L3 information, including the MET pointer, MAC SA and LTL index to perform the necessary replication operations. Note that the LTL index 822 specifies the replication engine and not the router as a destination of the packet/frame. That is, the LTL index enables the replication engine to perform multicast packet replication while also implementing MFD (block-to-router);
10 as noted, the index 822 further specifies port select signals associated with the incoming (ingress) VLAN, e.g., port 2 of the red VLAN. For frames destined to ports on VLANs other than the ingress VLAN, the replication engine rewrites those frames.

15 Specifically, each port on the switch receives the frame

Applicant respectfully submits that these passages merely disclose that “[t]he replication engine uses the L3 information, including the MET pointer, MAC SA and LTL index to perform the necessary replication operations” and “the LTL index enables the replication engine to perform multicast packet replication while also implementing MFD (block-to-router)” (emphasis added). Additionally, the excerpts teach that “[e]ach L3 multicast entry is further accessed by three components: the IPSA, IPDA and VLAN ID contained in the SCCM message 500” and “[t]hese three components are preferably hashed using a fixed hash algorithm” (emphasis added).

Nonetheless, simply teaching that “the LTL index enables the replication engine to perform multicast packet replication while also implementing MFD (block-to-router)” fails to even suggest that “a number of duplications of the packet for each of at least some of the

plurality of output ports is controlled by descriptors arranged in the linked-list table and is duplicated on a per port basis by duplicating the number of duplications on at least one of the plurality of output ports rather than by duplicating on all of the plurality of output ports” as required by the claims.

As such, Applicants respectfully submit that all claims are believed to be allowable over Tang and Wong for at least the foregoing reasons.

E. Support for the Claim Amendment

Applicants respectfully submit that the Specification provides adequate and clear support for the amendment to the claims. Applicants respectfully point to the following paragraphs that provide such support and note that these paragraphs are provided below for explanations and illustrations purposes in some examples and / or embodiments and are not intended to limit the scope of various embodiments or the scope of the claims.

For example, Applicants respectfully submit that at least ¶¶ [0006], [0021]-[0021], [0027] and their corresponding figures provide clear support for the amendment to the claims.

CONCLUSION

Based on the foregoing, all claims are believed allowable, and an allowance of the claims is respectfully requested. If the Examiner has any questions or comments, the Examiner is respectfully requested to contact the undersigned at the number listed below.

To the extent that any arguments and disclaimers were presented to distinguish prior art, or for other reasons substantially related to patentability, during the prosecution of any and all parent and related application(s)/patent(s), Applicant(s) hereby explicitly retracts and rescinds any and all such arguments and disclaimers, and respectfully requests that the Examiner re-visit the prior art that such arguments and disclaimers were made to avoid.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Vista IP Law Group's Deposit Account No. 50-1105, referencing billing number RZMI-P0310-US. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Vista IP Law Group's Deposit Account No. 50-1105, referencing billing number RZMI-P0310-US.

Respectfully submitted,

Dated: August 27, 2010

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